

**REMARKS**

Reconsideration of the above-identified patent application is respectfully requested. Enclosed herewith is a request to correct inventorship under 37 CFR § 1.48(b) and the requisite fee under 37 CFR § 1.17(i). The original filing included a preliminary amendment (copy enclosed) canceling claims 1-36, 50-62 and 81-169. The cancellation of these claims required the removal of Mr. Allen Brady, Mr. Matthew Kush and Mr. Patrick Vessely as inventors. The United States Patent Office did not acknowledge the requested change in inventorship. Correction of inventorship to remove Mr. Allen Brady, Mr. Matthew Kush and Mr. Patrick Vessely as inventors is respectfully requested.

Claims 37-49 and 36-80 are rejected under 35 USC § 103 as being unpatentable over United States Patent No. 5,335,711 in view of United States Patent No. 833,150. The rejection of the claims is respectfully traversed. In reviewing claims for patentability the Manual of Patent Examination instructs that “[t]he examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness.” See MPEP § 2142. “To establish a *prima facie* case of obviousness . . . the prior art reference (or references when combined) must teach or suggest all of the claim limitations.” *Id.* The Federal Circuit reiterated in *In re Oetiker*, 24 USPQ2d 1443,1446 (Fed. Cir. 1992), that “[t]here must be some reason, suggestion, or motivation found in the prior art whereby a person of ordinary skill in the field of the invention would make the combination” and “[t]hat knowledge can not come from the applicant’s invention itself.” Further, “[a]bsent such suggestion to combine the references, respondents can do no more than piece the

invention together using the patented invention as a template. Such hindsight reasoning is impermissible.” *Texas Instruments Inc. v. U.S. Int’l Trade Comm’n*, 26 USPQ2d 1018, 1029 (Fed. Cir 1993).

The Federal Circuit has directed that in order for a reference to be applied appropriately in an obviousness rejection under 35 USC § 103 the reference must be either in the field of the inventor’s endeavor or reasonably pertinent to the specific problem with which the inventor was involved. *In re Deminski*, 230 USPQ 313, 315 (Fed. Cir. 1986). It is well settled that references considered legally appropriate for application in a § 103 obviousness rejection must be in an art analogous to that of the invention; and, are generally referred to as analogous art. The Federal Circuit’s guidance includes that:

[a]nalogous art is that which is relevant to a consideration of obviousness under section 103 . . . . Two criteria are relevant in determining whether prior art is analogous: (1) whether the art is from the same field of endeavor, regardless of the problem addressed, and (2) if the art is not within the same field of endeavor, whether it is reasonably pertinent to the particular problem to be solved.

*Wang Laboratories Inc. v. Toshiba Corp.*, 26 USP2d 1767, 1773 (Fed. Cir. 1993).

In evaluating the applicability of the art that is not within the same field of endeavor the analysis must determine whether the art is still reasonably pertinent to the problem to be solved. The law is well settled that:

[a] reference is reasonably pertinent if even though it may be in a different field from that of the inventor’s endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor’s attention in considering his problem. Thus, the purpose of the both the invention and the prior art are important in determining whether the reference is reasonably pertinent to the problem the invention attempts to solve. If a reference disclosure has the same purpose as the claimed invention, the reference relates to the same problem, and that fact supports use of that reference in an obviousness rejection. An inventor may well have been motivated to consider the reference

when making his invention. If it is directed to a different purpose, the inventor would accordingly have had less motivation or occasion to consider it.

*In re Clay*, 23 USPQ2d 1058, 1061 (Fed. Cir. 1992).

In formulating the § 103 rejection of each of the present claims the Examiner has utilized United States patent No. 833,150. The '150 reference is clearly not from the same field of endeavor as the present invention. Therefore, the analysis must consider whether the '150 reference is reasonably pertinent to the particular problem being addressed by the present invention. The '150 reference has a purpose directed to "cisterns and tanks, and is designed more particularly for receiving and storing rain-water." U. S. Patent No. 833,150, Col. 1, L. 9-11. In contrast the purpose of the present invention is to pour molten metal. It is respectfully urged that the '150 reference does not have the same purpose as the present invention. Further, it is questioned whether a reference on the handling of rain water in the early 1900's would have commended itself to the attention of inventors developing systems to pour/dispense molten metals.

The Office Action provides that "Attenhoper teaches the above differences for the purposes of eliminating any impurities in water going to a cleaner source (page 1, lines 12-23). Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide a dispensing means as taught by Attenhoper, in Paine because this dispensing construction will eliminate impurities in the molten metal prior to introducing into the mold." Office Action page 3, l. 1-8. The '150 reference utilizes a layer of oil on top of the water to prevent insects gaining access to the water of the cistern. U. S. Patent No. 833,150, Col. 1, L. 12-19. Further, the '150 reference is concerned with sediment and more specifically discloses that "[b]y creating

this siphon any accumulation of sediment that may occur at the base of the jacket will be drawn up and carried out through the pipe B. . . ." U. S. Patent No. 833,150, Col. 2, L. 96-100. The '150 discusses floating a layer of oil on a tank of water and siphoning sediment through the system. These fundamental aspects of the '150 reference are foreign to the present invention. More particularly, the present invention would not want to stir up any sediment and pass it through the apparatus to the casting mold. The Examiner is respectfully requested to reconsider the application of the '150 reference and thereafter conclude that the reference should be removed as being considered non-analogous art. Withdrawal of the § 103 rejections is respectfully requested for at least this reason.

The Examiner's written rationale for the § 103 rejection does not foster an understanding why a person of ordinary skill in the art would make the proposed combination. More specifically, the proposed combination does not address the incapability of the primary '711 reference with the secondary '150 reference. The Examiner states that Paine in view of Attenhoper will eliminate impurities in the molten metal prior to being introduced into the mold. As discussed above, Attenhoper '150 specifically teaches that the sediment that may occur at the base of the jacket C will be drawn up and carried out through the pipe B. It is not understood how the passing of sediment through discharge pipe B will eliminate impurities in the casting mold. It is believed fair to conclude that pipe B would be analogous to the discharge into the casting mold and Attenhoper '150 teaches to pull the sediment from the base of the jacket C and deliver out through pipe B. Thus, in a casting system the sediment would be intentionally introduced into the casting mold.

Upon consideration that the '150 reference is from a different field of endeavor and that the '150 reference teaches the intentional passage of accumulated sediment through pipe B it is reasonable to conclude that the proposed rejection is founded in hindsight. The use of the Applicants' own disclosure as a blueprint to reconstruct the present invention from portions of prior references is inappropriate. Withdrawal of the § 103 rejection of claims 37-49 and 36-80 is respectfully requested.

Dependent claims 38-49, 64-68, 70, 71 and 73-80 are at least allowable as they depend from independent claims that are believed allowable.

Dependent claim 38 includes a nozzle in fluid communication with an aperture formed in the bottom wall member of the crucible. This nozzle is adapted to deliver a substantially vertical stream of molten metal. The cited combination does not provide a teaching or suggestion of these limitations and therefore the prima facie case of obviousness must fail. Withdrawal of the § 103 rejection of claim 38 is respectfully requested.

Dependent claim 39 includes a nozzle coupled with the aperture in the bottom wall member of the crucible and in fluid communication with the first cavity of the second tube and the nozzle has an inlet adapted to receive molten metal and an outlet adapted to discharge molten metal. The cited combination does not provide a teaching or suggestion of these limitations and therefore the prima facie case of obviousness must fail. Withdrawal of the § 103 rejection of claim 39 is respectfully requested.

Dependent claim 40 includes pressure differential means for creating a pressure differential between said first chamber and said second chamber, wherein upon said pressure differential means causing said first pressure to be greater than said second

pressure the molten metal within said crucible flows through said at least one entrance and into said passageway along said second tube. In examining means plus function language the law is well settled that one construing the claim language must look to the specification and interpret that language in light of corresponding structure, material or acts described therein, and equivalents thereof. The court in *In re Donaldson Co. Inc.*, 16 F. 3d 1189, 1195 (Fed. Cir 1994) provided that the "PTO may not disregard the structure disclosed in the specification corresponding to such language when rendering a patentability determination." *Id.* The cited combination does not provide a teaching or suggestion of these limitations and therefore the prima facie case of obviousness must fail. Withdrawal of the § 103 rejection of claim 40 is respectfully requested.

Dependent claim 42 defines the pressure differential means as including a quantity of unmelted metal stock extending into the first chamber, and wherein the unmelted metal stock is advanced into the molten metal within the crucible to increase the first pressure. The cited combination does not provide a teaching or suggestion of these limitations and therefore the prima facie case of obviousness must fail. Withdrawal of the § 103 rejection of claim 42 is respectfully requested.

Dependent claim 44 includes that the difference in size between the outlet and the at least one entrance allows the volumetric flow rate of molten metal through the at least one entrance to be substantially greater than the volumetric flow rate of molten metal through the outlet. The cited combination does not provide a teaching or suggestion of these limitations and therefore the prima facie case of obviousness must fail. Withdrawal of the § 103 rejection of claim 44 is respectfully requested.

Dependent claim 46 includes that the nozzle has an upstanding portion that extends into the second tube, and wherein a second cavity is defined between the second tube and the upstanding portion of the nozzle, wherein the second cavity is adapted to receive molten metal and heat the upstanding portion of the nozzle. The cited combination does not provide a teaching or suggestion of these limitations and therefore the prima facie case of obviousness must fail. Withdrawal of the § 103 rejection of claim 46 is respectfully requested.

Dependent claim 48 includes a sensor positioned proximate the outlet, the sensor detects an initial flow of molten metal from the outlet and communicates with the pressure differential means to stop creating a pressure differential between the first chamber and the second chamber. The cited combination does not provide a teaching or suggestion of these limitations and therefore the prima facie case of obviousness must fail. Withdrawal of the § 103 rejection of claim 48 is respectfully requested.

Dependent claim 65 further includes a nozzle coupled to the crucible and in fluid communication with the discharge opening. The cited combination does not provide a teaching or suggestion of these limitations and therefore the prima facie case of obviousness must fail. Withdrawal of the § 103 rejection of claim 65 is respectfully requested.

Dependent claim 68 includes a difference in area between the nozzle outlet and the at least one entrance allows the volumetric flow rate of molten metal through the at least one entrance to be substantially greater than the volumetric flow rate of molten metal through the outlet. The cited combination does not provide a teaching or

suggestion of these limitations and therefore the prima facie case of obviousness must fail. Withdrawal of the § 103 rejection of claim 68 is respectfully requested.

Dependent claim 70 includes that the pressure differential device defines a consumable member that is replenished by additional unmelted metal material. The cited combination does not provide a teaching or suggestion of these limitations and therefore the prima facie case of obviousness must fail. Withdrawal of the § 103 rejection of claim 70 is respectfully requested.

Dependent claim 78 includes that the cross-sectional area of the passageway varies between the first inlet end and the second outlet end. The cited combination does not provide a teaching or suggestion of these limitations and therefore the prima facie case of obviousness must fail. Withdrawal of the § 103 rejection of claim 78 is respectfully requested.

Dependent claim 79 includes that the first passageway portion tapers prior to the inflection point. The cited combination does not provide a teaching or suggestion of these limitations and therefore the prima facie case of obviousness must fail. Withdrawal of the § 103 rejection of claim 79 is respectfully requested.

Dependent claim 80 includes that the first passageway has a substantially frustum-conical shape part prior to the inflection portion. The cited combination does not provide a teaching or suggestion of these limitations and therefore the prima facie case of obviousness must fail. Withdrawal of the § 103 rejection of claim 80 is respectfully requested.

Claims 37-49 and 36-80 are believed to be in condition for allowance, and the issuance of a Notice of Allowance is respectfully solicited. The Examiner is cordially invited to contact the undersigned by telephone to discuss any unresolved matters.

Respectfully submitted,



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